RESEARCH & DEVELOPMENT LABORATORY

May 1966

I. GENERAL

25X1A9a 1. [redacted] Chief of the DCI Protective Staff, visited the Laboratory during his two week reserve training program this month. Also among Laboratory visitors during this period were Messrs. [redacted] 25X9A8 25X9A8 Although the primary purpose of the visit was to view the KY-3 automatic card changers, they also received a tour of the facilities.

25X1A9a 2. Mr. [redacted] Analysis & Appraisal engineer, visited Atlantic City, New Jersey, this month to attend the 1966 Power Sources Conference.

3. The value of equipment fabricated at the R&D Laboratory and delivered to the warehouse for stock during this reporting period was $71,050.00.

II. DESIGN

1. A developmental project initiated a little less than two years ago at the R&D Laboratory for the design of a new crystal-controlled agent receiver reached the prototype stage this month. The prototype, carrying the nomenclature RR-59, which was delivered to OC-OS for evaluation represents a considerable improvement over its predecessor, the RR-48. Generally its characteristics including sensitivity, image rejection and RF radiation are an order of magnitude better than the RR-48. Additionally, the RR-59 is smaller in size, covers a wider frequency range, and contains a 10-channel crystal matrix. This receiver is to be a companion of the new RT-59 broadband agent transmitter soon to be completed.

2. The design project for the development of a new miniature, highly reliable case-to-case connector likewise reached the finished prototype stage this month with the delivery of sample connectors manufactured to our specifications by [redacted] 25X1A5a1 Inc. Following a thorough evaluation of these connectors, it is intended to incorporate them into a new prototype RS-59

system. The new case-to-case connector provides a rigid and rugged physical connection between packages along with very reliable electrical characteristics, while requiring a very minimum of packaging space and no cables to wear and eventually cause equipment failure.

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3. [redacted]

4. [redacted]

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5. [redacted]

25X1C1e

III. ANALYSIS & APPRAISAL

1. Seven evaluations were published and distributed during May. Five other evaluations were completed and the reports written. These are in process of being published. Five evaluations are presently in the testing phase.

2. The EMBC-112 battery charger was developed by [redacted] 25X1A5a1
[redacted] 25X1A5a1
California. The unit is designed to provide a 225 ma ± 25 ma output to a 12 - 50 VDC battery with power line input ranging from 90 - 240 VAC at 50 - 400 cps. The unit performed well over the specified input-output ranges in temperatures of 0 - 50°C. The unit is small in volume and light weight for this degree of versatility. The current supplied to batteries of various voltages is remarkably constant. The unit has open circuit and short circuit protection across its terminals; however, contact of one of the terminals to electrical ground will destroy the equipment in addition to providing a shock hazard to personnel. Another condition that may limit the usefulness of the EMBC-112 is high RFI. The radiated RFI would interfere with a receiver operating in the same room and the conducted RFI would interfere with a receiver connected to the same power line.

3. [redacted] 25X1C1a1

IV. FABRICATION

1. Two new production projects were initiated this month. The first was for twenty AU-11 accessory units designed for use with, and to be stored within, the TS-10 test set. The AU-11, in providing selection of various signal output levels from the TS-10, will enable it to be more effectively used in its intended purpose of maintaining the CU-10, 150-cycle IDY recognition unit presently used in medium-speed receiving positions. The second new project is for fabrication of five antenna masts for mounting the APN-102B microwave antenna. The masts, which will be expandable from 2 to 12 feet will be erected utilizing a floor-to-ceiling pressure fit.

2. Five production projects were completed during this reporting period. The first, for RT/B-48A (3 to 12 mc) transistorized agent transmitters resulted in delivery of fifty units to the warehouse for stock. The second was a modification of the KA-3 keying adaptor carrying the nomenclature KA-3A. The modification is intended to improve performance and reliability of this keying adaptor designed to key the RT/D-3 with the KE-8. The third production project completed was for thirty HK-2 hand keys. The HK-2 is an enlarged and ruggedized version of the HK-1 hand key. The fourth provided for modification of four commercial Simplex date-time stamps to increase their throat depth from 2 inches to 3 7/8 inches. This modification was required by the Signal Center due to a change in message forms. The fifth completion resulted in delivery of fifty spare control modules for the HG-48A handcrank generators to stock.

3. Partial deliveries to the warehouse this month included one-hundred-and-twenty BC-48A solar chargers and fifteen HG-48A handcrank generators. Both of these units are intended to charge the BS-48 power supply used with the RT-48 agent transmitter.

V. ADMINISTRATIVE

TDY

25X1A9a [redacted]

Chicago, Illinois	9 - 10 May
Cincinnati, Ohio	18 - 19 May
Boston, Massachusetts	9 - 13 May
Chicago, Illinois	9 - 10 May
Cincinnati, Ohio	18 - 19 May
Atlantic City, N. J.	23 - 27 May
Boston, Massachusetts	9 - 13 May
Boston, Massachusetts	9 - 13 May

TRANSFERS

N. A.

PCS

N. A.

EOD

N. A.

RESIGNATIONS

N. A.

EFFECTIVE PROMOTIONS

25X1A9a [redacted] GS-10 to GS-11 22 May

TRAINING

N. A.

OTHER

N. A.

EXTERNAL PROJECTS SECTION

May 1966

I. PROJECTS

1. CV-24 DUAL CHANNEL LOW FREQUENCY IF CONVERTER:

Proposals have been requested for a prototype and ten service test models of the CV-24. This equipment is a two channel version of the CV-13, and will be used in dual-diversity medium-speed scheduled contact positions. The unit will mount in a rack and is 3 1/2 inches high. It has a minimum of front panel controls, requires no tuning, and uses automatic gain control to set the output level to the recorder. The unit will accept IF inputs of 100,455 and 500 kHz. The prototype will provide outputs of 10, 15, and 22 kHz to allow experimentation with higher recording frequencies.

2. KE-35 DECEPTION KEYER:

The KE-35 is a replacement for the KE-22 that offers several improved operating features. The keyer will allow the complete automation of deception broadcasts. Deception programs for a 24-hour radio day will be prepared on teletype tape by a computer. The information on the tape is abbreviated and provides the sequences to be transmitted and timing information. The KE-35 reads the tape and automatically repeats the sequence for the designated time. Through the use of preset front panel switches, improved operation during valid contacts is obtained. Rows of thumbwheel switches will be arranged in columns designated Call Sign, Frequency Indicator, and Operating Signal. The complete signal plan sequences for a contact will be set up in advance, and the operator will choose those to be broadcast by simply operating an adjacent control. The CV/A-19 will be used for the Baudot-to-Morse converter portion of the keyer. Specifications have been prepared and proposals are expected in late June.

3. AS-12 PROGRAM:

25X1C1a1 [redacted]

25X1C1a1

[redacted]

II. ADMINISTRATIVE

TDY

25X1A9a

[redacted]

New York City, N. Y.	19 May
Philadelphia, Penna & Woodbury, New Jersey	24 - 26 May
St. Louis, Missouri	12 May
Chicago, Illinois	13 May
Cincinnati, Ohio	19 May
Horsham, Penna.	25 May
Princeton, New Jersey	6 May
Belmont, Massachusetts	20 May
Cincinnati, Ohio	25 May
Cincinnati, Ohio	19 May
Blue Bell, Penna.	25 May
Long Island, New York	26 May
[redacted] 25X1A6a	1 May - Present

25X1A6a

[redacted] 8 May

EOD

N. A.

RESIGNATIONS

N. A.

EFFECTIVE PROMOTIONS

25X1A9a	[redacted]	GS-10 to GS-11	22 May
		GS-10 to GS-11	22 May

TRAINING

N. A.

OTHER

N. A.